CLAIMS

1. Electronically conductive reforming catalyst for a fuel cell, especially a molten carbonate fuel cell, which contains particles of a water-adsorbent substrate material (6) and particles of a catalyst material (7) located on the substrate material (6), characterized by the fact that the substrate material (6) itself is electronically conductive.

2. Reforming catalyst in accordance with Claim 1, characterized by the fact that the specific conductivity of the reforming catalyst (4) exceeds 1 S/cm under operating conditions.

3. Reforming catalyst in accordance with Claim 1 or Claim 2, characterized by the fact that the substrate material (6) is composed of an electronically conductive metal oxide.

4. Reforming catalyst in accordance with Claim 3, characterized by the fact that the substrate material (6) is composed of one or more substances of the group comprising ZnO, TiO_2, Fe_2O_3, $LiFeO_2$, Mn_2O_3, and SnO_2.

5. Reforming catalyst in accordance with Claim 1, Claim 2, or Claim 3, characterized by the fact that the substrate material (6) consists of a water-adsorbent material that is doped with impurity ions.

6. Reforming catalyst in accordance with Claim 5, characterized by the fact that the substrate material (6) consists of one or more substances of the group comprising aluminum-doped zinc oxide (AZO), indium-doped tin oxide (ITO), or antimony-doped tin oxide (ATO).

7. Reforming catalyst in accordance with any of Claims 1 to 6, characterized by the fact that the catalyst material (7) consists of nickel.

8. Reforming catalyst in accordance with any of Claims 1 to 7, characterized by the fact that the particles of catalyst material (7) are present in the form of small islands on the substrate material (6).

9. Reforming catalyst in accordance with Claim 8, characterized by the fact that the size of the small islands of catalyst material (7) is on the order of a few nanometers.

10. Reforming catalyst in accordance with any of Claims 1 to 9, characterized by the fact that the catalyst (4) is produced in the form of a layer (8).

11. Reforming catalyst in accordance with Claim 10, characterized by the fact that the catalyst (4) is produced in the form of a flat film-like material.

12. Reforming catalyst in accordance with Claim 10, characterized by the fact that the catalyst (4) is produced in the form of a coating applied on a component of the fuel cell.

13. Reforming catalyst in accordance with Claim 12, characterized by the fact that the coating that forms the catalyst (4) can be applied to a current collector (3) of the fuel cell.

14. Reforming catalyst in accordance with Claim 12, characterized by the fact that the coating that forms the catalyst (4) can be applied to a bipolar separator (5) of the fuel cell.

15. Method for producing an electronically conductive reforming catalyst in accordance with any of Claims 1 to 14, characterized by the fact that a slurry or a paste is produced from the substrate material (6) that supports the catalyst material (7), that the slurry or paste is formed into a layer (8), and that the layer (8) is sintered.

16. Method in accordance with Claim 15, characterized by the fact that the layer (8) is formed by film casting, dipping, spraying, rolling, or application by a doctor blade.

17. Method in accordance with Claim 15 or Claim 16, characterized by the fact that the sintering of the layer (8) is carried out outside the fuel cell during the production process as a separate step of the method.

18. Method in accordance with Claim 15 or Claim 16, characterized by the fact that the sintering of the layer (8) is carried out in situ when the fuel cell is started up with the catalyst (4)

already incorporated in the fuel cell.

19. Fuel cell, especially a molten carbonate fuel cell, with a reforming catalyst (4) in accordance with any of Claims 1 to 18.

Figure 1.

KEY:

Bipolarblech 5 = bipolar separator 5

Katalysatorschicht 4 = catalyst layer 4

Stromkollektor 3 = current collector 3

Elektrode 1 = electrode 1

Matrix 2 = matrix 2